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A NEW SPECIES OF *ERIGERON* (ASTERACEAE: ASTEREAE) FROM NORTHWESTERN CHIHUAHUA, MEXICO

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ABSTRACT

Erigeron nitens Nesom, sp. nov., is described from northwestern Chihuahua, Mexico, where it apparently is narrowly endemic. It is most similar and probably closely related to *E. arizonicus*, differing in its glabrous stems, leaves, and phyllaries and in its serrate, pinnately nerved, and non-clasping leaves.

KEY WORDS: *Erigeron*, Astereae, Asteraceae, new species, Chihuahua

Exploration in northwestern Chihuahua by students from Northern Arizona University has brought to light an undescribed species of *Erigeron*, represented by two collections. The species is highly distinctive, suggesting that mountains of this area have not previously been botanically explored.

Erigeron nitens Nesom, sp. nov., Figs. 1, 2, 3, 4, and 5

Erigeronti arizonico A. Gray similis sed praesertim differt caulibus foliis ac phyllariis paene penitus glabris et foliis serratis pinnatinervibus non amplexicaulibus.

TYPE: **Mexico**. **Chihuahua**. Sierra Madre Occidental, Rincon de las Tinajas, 30° 33' 26" N, 108° 38' 40" W, ca. 2388 m, mixed conifer-oak (*Pinus*, *Pseudotsuga*, *Quercus*) with *Lupinus*, *Lopezia*, *Oxalis*, *Brickellia*, *Galium*, *Silene*, *Pyrola*, 13 Sep 2009, *M. Joe 294* with C. Cortes (holotype: TEX; isotype: ASC, others to be distributed).

Perennial herbs, rhizomatous, fibrous-rooted, rhizomes relatively thick, mostly simple. **Stems** erect-ascending at the base, 30–35 cm high, completely glabrous or sparsely hirsutulous only immediately below the heads. **Leaves** basal (persistent) and cauline, basal and proximal largest or sometimes enlarging immediately above the basal, spatulate-petiolate, pinnate-nerved, completely glabrous except for sparsely ciliate margins, blades obovate to elliptic-ovate, 1.5–6 long, 1–2.5 cm wide, basally attenuate to a petiolar region 1.5–8 cm long, margins shallowly serrate to sinuate-serrate with 3–5(–7) pairs of teeth, cauline becoming obovate and epetiolate then lanceolate near the heads, sharply to shallowly serrate. **Heads** [probably 1–]3 from branches on distal 1/3–1/4 of stem, bracteate peduncles 4–10 cm. **Involucres** 4–5 high, 9–12 mm wide; phyllaries in 2–4 series, greenish-brown, with 3 parallel veins (golden-brown because of oil ducts), glabrous (no hairs or glands), linear-lanceolate, apices abruptly acute. **Ray florets** 30–50, corollas white, drying lilac-tinged, 10–11 mm long, ca. 1 mm wide, lamina weakly coiling at the tips. **Disc florets** 2.5–3 mm long. **Achenes** 1.8 mm long, with 2 thick, golden-brown lateral nerves, often with a third nerve closely associated with one of the laterals, faces sparsely strigose; pappus bristles 18–20, ca. 2 mm long, with a few short outer setae.

Flowering Aug–Oct. Mixed conifer and oak woods; 2300–2500 m elevation. The epithet (Latin, *nitens*, shining, smooth) alludes to the glabrous stems and leaf surfaces.

Additional collection examined: **Mexico. Chihuahua**. Sierra Madre Occidental, Mesa Prieta Sur, 30° 29' 12" N, 108° 32' 28" W, 2424 m, [mixed conifer] (*Cupressus*, *Pinus*, *Pseudotsuga*) with *Aquilegia*, *Bromus*, *Thalictrum*, *Artemisia*, *Oxalis*, *Brickellia*, *Robinia*, *Galium*, 10 Sep 2009, *M. Joe 257* with C. Cortes (ASC, TEX).

The collections of *Erigeron nitens* were made in the Mesa de las Guacamayas, a remote mountainous area about 70 kilometers west-northwest of Nuevo Casas Grandes, immediately along the border of Sonora and just west of Rio San Pedro. The Mesa de las Guacamayas is found within the Ejido 5 de Mayo, a collectively held land unit that encompasses more than 25,000 hectares in the mountains and piedmont of the Sierra Madre Occidental. The highest point of the range is Cerro El Palomo, a peak of nearly 2700 meters according to Google Earth. The type locality is 1.5 miles west of the peak and about 0.5 miles east of the Sonoran border. The paratype was collected about 7.5 miles southeast of the type. The area of high elevation is continuous into immediately adjacent Sonora, and *E. nitens* almost certainly occurs as well in that state.

"The type and paratype localities are part of a permanent plot grid set up to study the fire regimes and ecological dynamics of old growth forests in the northwest of México. The names of the sites (Rincón de las Tinajas and Mesa Prieta Sur) do not necessarily represent local toponymies. Forests at both sites had an understory dominated by large and old (>300 years old) trees (>50 cm DBH) of *Pinus* and *Pseudotsuga*" (fide C. Cortes, pers. comm.).

Erigeron nitens is a member of sect. *Fruticosus* G. Don (Nesom 1982, 2008). A number of these species occur in southern New Mexico and Arizona—*E. arizonicus* A. Gray, *E. coulteri* Porter, *E. hessii* Nesom, *E. kuschei* Eastw., *E. rybius* Nesom, *E. speciosus* (Lindl.) DC., and *E. vreelandii* Greene (Nesom 2006). Of these *E. arizonicus*, *E. speciosus*, and *E. vreelandii* extend into northern Mexico, but *E. nitens* is the only one of the group endemic to Mexico.

Among the species of sect. *Fruticosus*, *Erigeron nitens* is most similar to *E. arizonicus*, which is localized in southern Arizona and southwestern New Mexico, touching into Sonora in the San Jose Mountains, essentially a southward extension of the Huachuca Mountains (Fig. 1). The two species are similar in their spatulate basal and lower cauline leaves, relatively short stems arising from short, fibrous-rooted rhizomes, and few heads with white, weakly coiling rays.

Among the most conspicuous differences between the two species is the nearly complete lack of vestiture on the stems, leaves, and phyllaries of *Erigeron nitens*—except for the ciliate leaf margins and the sparsely hirsutulous zone immediately below the heads, there are neither glands nor non-glandular hairs. *Erigeron arizonicus* is variable in vestiture, but all plants have hirsute to hirsute-strigose leaf surfaces, the stems characteristically are strigose or hirsute-strigose, and the phyllaries are consistently minutely stipitate-glandular. The entire leaf margins of *E. arizonicus* are completely consistent, emphasizing the serrate leaves of the new species as distinct. Differences are summarized here.

1. Stems, leaf surfaces, and phyllaries glabrous; cauline leaves not at all clasping; leaves pinnately nerved; cauline leaves not at all clasping; phyllary apices relatively thick and abruptly acute to obtuse ..... **Erigeron nitens**

1. Stems and leaf surfaces glabrate to strigose, hirsute, or villous, phyllaries minutely stipitate-glandular with non-glandular hairs variably present; basal and at least the proximal cauline leaves distinctly 3-nerved; cauline leaves usually subclasping; phyllary apices relatively thin and drawn out into loose appendagelike extensions ..... **Erigeron arizonicus**

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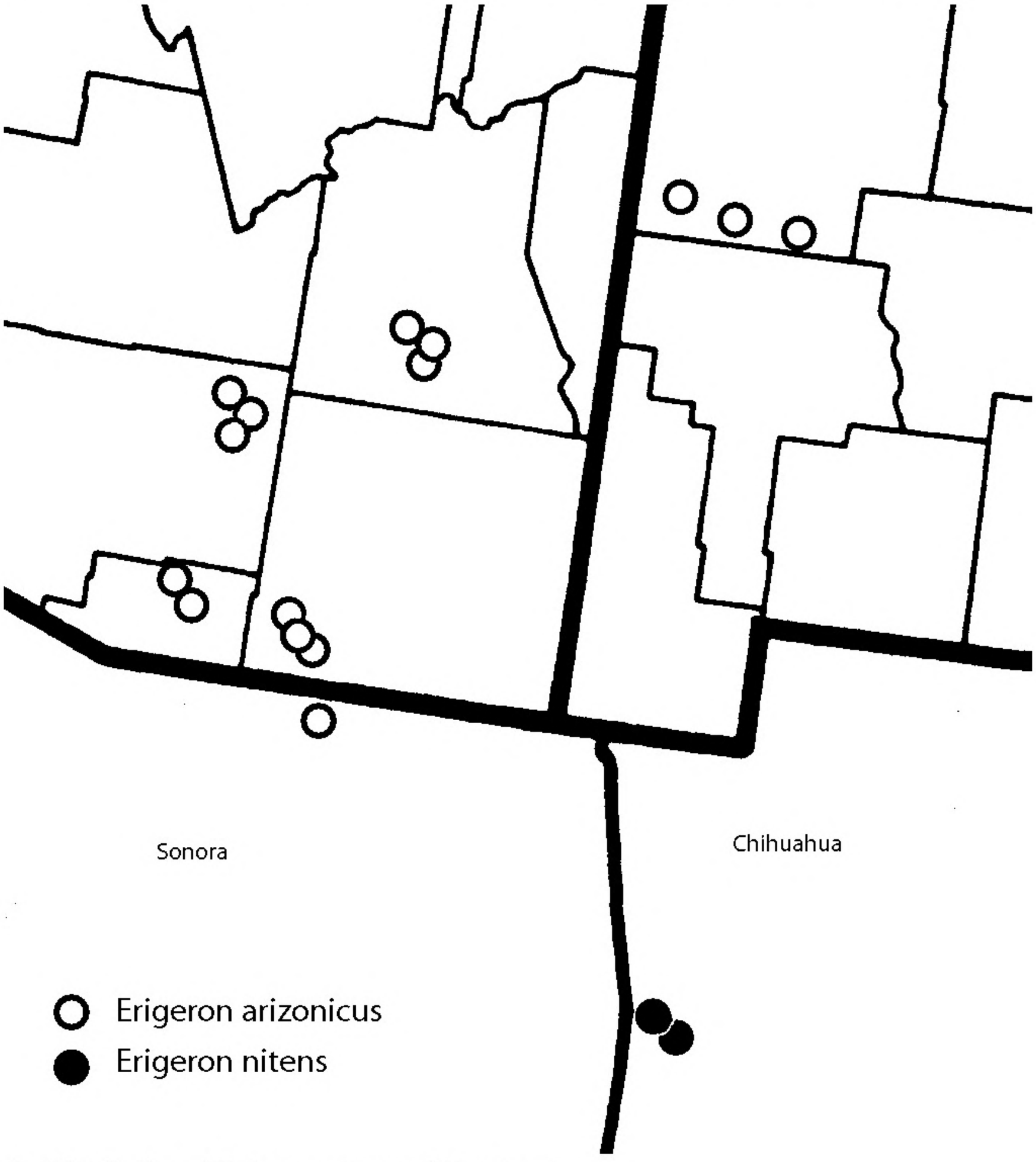

Fig. 1. Distribution of *Erigeron nitens* and *E. arizonicus*.

Fig. 2. Holotype of *Erigeron nitens* (*M. Joe 294* with C. Cortes).

Fig. 3. Paratype of *Erigeron nitens* (*M. Joe 257* with C. Cortes).

Fig. 4. Head of holotype.

Fig. 5. Leaf and stem of holotype.